

## S. W. WILLISTON'S SPECIES OF EPHYDRIDAE (DIPTERA) FROM ST. VINCENT (WEST INDIES)

Wayne N. Mathis and James F. Edmiston

*Abstract.* — Lectotypes are designated for the following species: *Athyroglossa atra*, *Discomyza dubia*, *Athyroglossa nitida*, *Discocerina nana*, *Discocerina obscura*, *Discocerina facialis*, *Notiphila decorata*, *Notiphila bellula*, *Paralimna multipunctata*, *Paralimna obscura*, *Ilythea flavipes*, and *Scatella obscura*. Nomenclatural changes resulting from this study are as follows: *Dichaeta furcata* Coquillett is a junior synonym of *Notiphila decorata* Williston; *Psilopa nigropuncta* Williston is a junior synonym of *Psilopa girschneri* Von Röder; *Psilopa desmata* Williston is transferred to *Polytrichophora* where it is the senior synonym of *P. boriqueni* Cresson; *Hydrina nitifrons* Williston is transferred to *Hyadina*; and *Athyroglossa atra* Williston is accorded valid species status (previously it was listed as a junior synonym of *A. glaphyropus* Loew).

In 1896, Samuel Wendell Williston, then a professor of geology at the University of Kansas, published a rather remarkable monograph on the Diptera of St. Vincent. As a result, the dipterous fauna of St. Vincent remains one of the best studied in the Western Hemisphere. Williston's monograph included 161 genera and approximately 345 species, of which 256 were newly described. The vast majority of Williston's species are still valid, although many have been transferred to other genera, and in a few cases, other nomenclatural changes have resulted.

The thoroughness of Williston's treatment is likewise a testament to the excellent collecting of H. H. Smith, an American entomologist who was an experienced collector in the tropics and who was sent to the West Indies to assist the West Indian Committee (Papavero 1973). The Royal Society of England established this committee, and Smith was employed specifically to collect insects on these islands for the purpose of "... investigating the Flora and Fauna of the West Indies" (Williston 1896:253). Most of the collections that Smith made on St. Vincent were eventually deposited in the

British Museum (Natural History) (now "The Natural History Museum"). The specimens of Diptera, however, were first sent to Professor Williston, who was a well-known dipterist in addition to being a professor of paleontology. Although Williston contributed much to our knowledge of St. Vincent's fauna, Diptera specifically, he never set foot on the island.

Among the 345 species of Diptera that comprise the monograph (the total also includes Aldrich's sections on the families Phoridae and Dolichopodidae), Williston included 26 species of Ephydriidae, of which 24 were newly described. One species, *Drosophila pollinosa*, was described in the family Drosophilidae. Williston noted that this species was probably an ephydrid but preferred to describe it in *Drosophila* because some of its characters would (p. 414) "... lead one to search for the species in this genus." The species is now assigned to the ephydrid genus *Paratissa*. The two species that were described previously are *Cressonomyia aciculata* (Loew) and *Hydrochasma leucoproctum* (Loew).

The importance of Williston's monograph to the study of Ephydriidae is several

fold. Few 19th century treatments of Diptera included this many species of shore flies, which is all the more significant as St. Vincent is such a geographically restricted locality. The names Williston proposed, moreover, are relatively old in the nomenclatural history of the Ephydriidae, especially for species occurring in the New World tropics. Being relatively old, the species names have been cited frequently in various studies. With few exceptions, however, the specimens from St. Vincent were not examined nor included in these studies. Thus the identities of species occurring elsewhere but determined as conspecific with those on St. Vincent must be considered questionable. This was not necessarily the fault of these workers, as possibilities for travel and study of the specimens Williston described were more limited then. Furthermore, travel to a single museum would not have been sufficient. Although the majority of specimens were deposited in London (BMNH), the rest of the collection was divided and is now deposited in the following American institutions: The University of Kansas, Lawrence (KU); American Museum of Natural History, New York (AMNH); and Cornell University, Ithaca, New York (CU). A further complication in assembling complete type series of Williston's species is the apparent loss of some specimens. This is especially critical for species that were originally represented by a single specimen, the holotype, or just a few specimens. As would be expected with limited access to collections and loss of specimens, errors in identification were made, and some of these have been perpetuated in the literature.

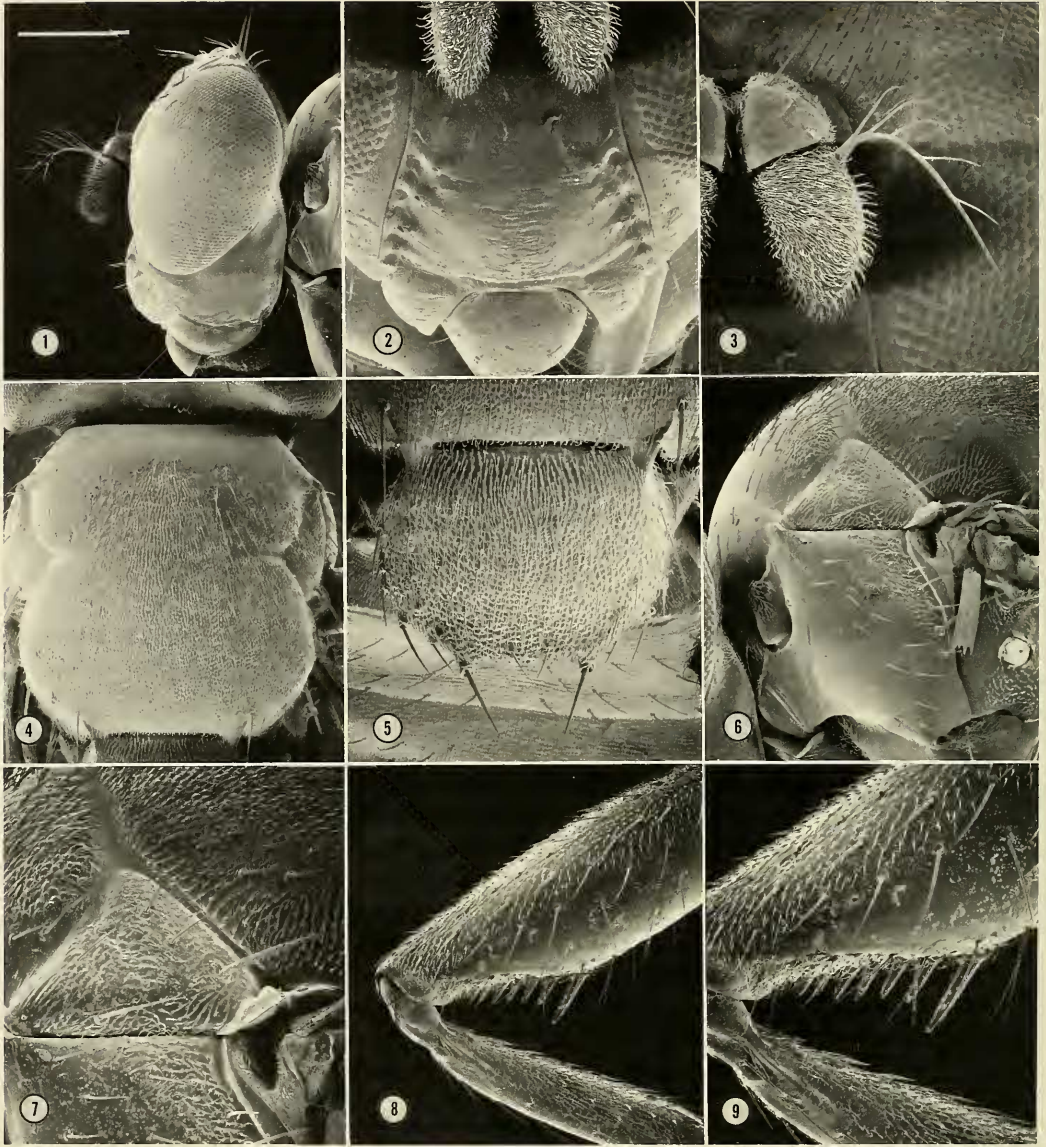
The first author is now working on two projects that concern the Caribbean fauna (the shore-fly faunas of the West Indies and Belizean Cays) and for which accurate determinations of Williston's species are essential. For better assurance of accurate identifications for these studies, we have attempted to examine all extant specimens included in the type series of Williston's

species. We also conducted field work on St. Vincent to supplement the type series with freshly collected specimens, which, for *Paratissa pollinosa*, are the only extant specimens. The field work on St. Vincent resulted in numerous species that Williston did not report (nearly 25 thus far). The latter will be included in the more comprehensive faunal work noted previously. Our purpose here is to treat Williston's species, especially the nomenclatural changes that need to be properly documented for a forthcoming checklist of nearctic Ephydriidae (Mathis 1992) and a world catalog (Mathis & Zatznicki, pers. comm.) that will be published before the faunal studies will be available.

St. Vincent is volcanic in origin and is part of the Windward chain of the West Indies (between the parallels of 13°23'–13°07'N and the meridians of 61°07'–61°17'W). The principal volcano, La Soufrière, is still active, last erupting in 1979, and was climbed as part of our field work there. St. Vincent and the Grenadines are a nation of islands with an area of nearly 390 sq km and a population of approximately 105,000. St. Vincent is situated in the Trade Wind Zone and has a Tropical Eastern Maritime climate (Harrison & Rankin 1976). Considerable topographical relief exists on the island (sea level to 923 m), resulting in localized variations in the climate between the windward and leeward coasts. St. Vincent and the Grenadines have been an independent nation since 1979. Formerly they were a British colony, which was their political affiliation during the 1890's when the faunal and floral surveys were conducted.

*Methods and materials.* — The species are treated in the sequence listed in recent catalogs (Wirth 1968a, Cogan 1980, Mathis 1989).

Label data, with the exception of primary types (lectotype designations in particular), are not cited for specimens bearing only general locality labels, such as "St. Vincent," which is the only label on many of



Figs. 1–9. Scanning electron micrographs of *Athyroglossa atra*: 1, Head, lateral view (0.27 mm); 2, Face, anterior view (136  $\mu\text{m}$ ); 3, Antenna, anterior view (100  $\mu\text{m}$ ); 4, Scutum, dorsal view (250  $\mu\text{m}$ ); 5, Scutellum, dorsal view (150  $\mu\text{m}$ ); 6, Notopleuron and katepisternum, lateral view (176  $\mu\text{m}$ ); 7, Notopleuron, lateral view (107  $\mu\text{m}$ ); 8, Fore femur and tibia, posterior view (120  $\mu\text{m}$ ); 9, Same (75  $\mu\text{m}$ ). (Scale lengths in parentheses; bar scale for all photographs = Fig. 1.)

the specimens. Label data for primary types are quoted verbatim to better identify the exact specimen (particularly crucial for the lectotypes that are designated). A slash (/) in the citation of label data separates infor-

mation on a label(s) if two or more labels are on a pin. Lectotype specimens were selected on the basis of the best specimen of the original type series that could readily be identified, regardless of gender. Frequently,

however, all syntypes were of one gender, leaving no alternative in that regard.

Other specimens that were collected in conjunction with recent field work on St. Vincent were examined as part of this study and are listed with the appropriate species to document the species' continuance and distribution on the island. The specimens are deposited in the following institutions (acronyms used in text are noted in parentheses): American Museum of Natural History, New York, USA (AMNH); The Natural History Museum, London, England (BMNH); Hungarian Natural History Museum, Budapest, Hungary (HNHM); National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA (USNM); Museum of Zoology and Entomology, Lund University, Lund, Sweden (ZIL).

The only two specific localities that Williston mentioned for species of Ephydriidae are "Perseverance Valley" for *Ephydra pygmaea* and "near the sea by open stream" for *Psilopa desmata*. None of the specimens bearing determination labels of either species now has these locality data. The specimens apparently from Perseverance Valley, however, usually have a label indicating elevation, which varies from "500 feet." to "1000 ft." There are other specimens that are also labeled "500 feet" or "1000 feet," and we suspect that they too were collected in Perseverance Valley.

1. *Athyroglossa (Athyroglossa) atra*  
Williston, revised status  
Figs. 1–12

*Ochtheroidea atra* Williston, 1896:401.

*Athyroglossa atra*. —Cresson, 1946:133 [generic combination].

*Athyroglossa glaphyropus* of authors, not Loew. —Wirth, 1968a:3 [misidentification, synonymy with *A. atra*].

*Type material*. —The lectotype female (designated here) is labeled "Co-type [circular label with a yellow border]/St. Vin-

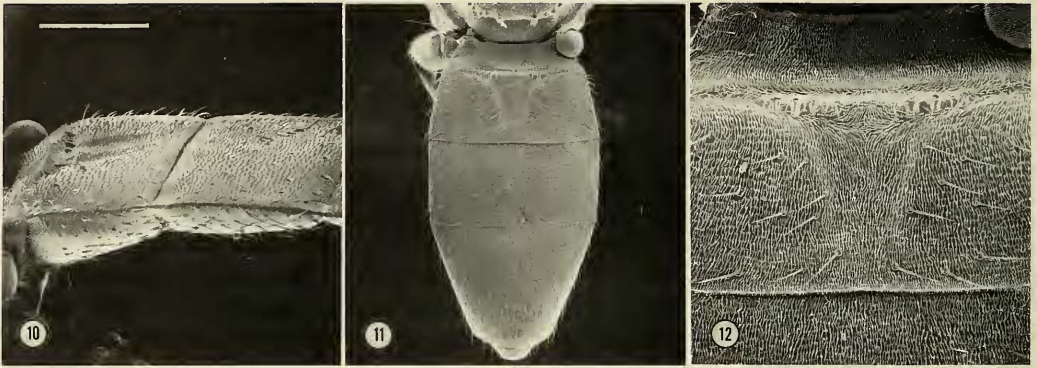
cent, W.I. H. H. Smith/W. Indies. 1907–66./Ochtheroidea atra Will [handwritten, two red submarginal borders]/LECTOTYPE *Ochtheroidea atra* Will. By W.N.Mathis [handwritten except for "LECTOTYPE" and "By", black sub-border]. The lectotype is double mounted (pin in a rectangular piece of cardboard), is in good condition, and is deposited in the BMNH. There are also eight paralectotypes as follows: BMNH (1 ♂, 4 ♀), KU (1 ♂), AMNH (1 ♂, 20324; 1 ♀, "Leeward near sea. By open Stream. Sept." [handwritten], 20322). Williston, in the original description, noted that there were "Twelve specimens."

*Other specimens examined from St. Vincent*. —Charlotte Parish: Montreal, 26 Mar 1989, A. Freidberg (1 ♀; USNM). St. Andrew Parish: Camden Park, 25 Mar 1989, A. Freidberg (2 ♀; USNM). St. David Parish: Richmond Beach, 28 Mar 1989, A. Freidberg (1 ♂; USNM). St. Patrick Parish: Cumberland Bay, 28 Mar 1989, A. Freidberg, W. N. Mathis (7 ♂, 8 ♀; USNM).

*Distribution*. —Neotropical: Colombia, Costa Rica, Ecuador, El Salvador, Mexico (Chiapas, Guerrero, Veracruz, San Luis Potosí), Panama, Venezuela, West Indies (Barbados, Dominica, Grenada, Jamaica, St. Vincent, Trinidad).

*Remarks*. —This is the type species of *Ochtheroidea* Williston. Wirth (1968a:3) synonymized this species with *Athyroglossa glaphyropus* Loew. We have examined the primary types of both names, however, and do not feel that they are conspecific (also see "Remarks" section of the next species, *A. dubia*).

This species is distinguished from congeners by the following combination of characters: arista with 4–5 dorsal branches (Figs. 1, 3); scutellum subquadrate, granulate, marginal setae 4–5 on each side, short and arising from distinct tubercles (Fig. 5); wing lightly infuscate generally, especially over crossvein dm-cu and at apex; halter whitish; mid and apical portion of hind tibiae yellowish; abdominal terga 1–4 flattened



Figs. 10–12. Scanning electron micrographs of *Athyroglossa atra*: 10, Abdomen, lateral view (200  $\mu\text{m}$ ); 11, Abdomen, dorsal view (0.43 mm); 12, Second tergum, dorsal view (150  $\mu\text{m}$ ). (Scale lengths in parentheses; bar scale for all photographs = Fig. 10.)

dorsally and creased at dorsolateral margin (Fig. 10).

2. *Athyroglossa (Athyroglossa) dubia*  
(Williston), revised status  
Figs. 13–21

*Discomyza dubia* Williston, 1896:392.—  
Wirth, 1968a:3 [neotropical catalog; syn-  
onymy with *A. glaphyropus* Loew].

*Type material.*—The lectotype male of *Discomyza dubia* (designated here) is labeled “Cotype [circular label with a yellow border]/Windward side St. Vincent, W.I. H. H. Smith./W. Indies. 1907–66./*Discomyza dubia* Will [handwritten, two red submarginal borders]/LECTOTYPE *Discomyza dubia* Will. ♂ By W.N.Mathis [handwritten except “LECTOTYPE” and “By”, black submarginal border].” The lectotype is double mounted (pin in a rectangular piece of cardboard), is in good condition, and is deposited in the BMNH. There are also 27 paralectotypes as follows: BMNH (13 ♂, 10 ♀), KU (3 ♂, 1 ♀ “500 feet.”). In the original description, Williston mentioned that there were “Numerous specimens.”

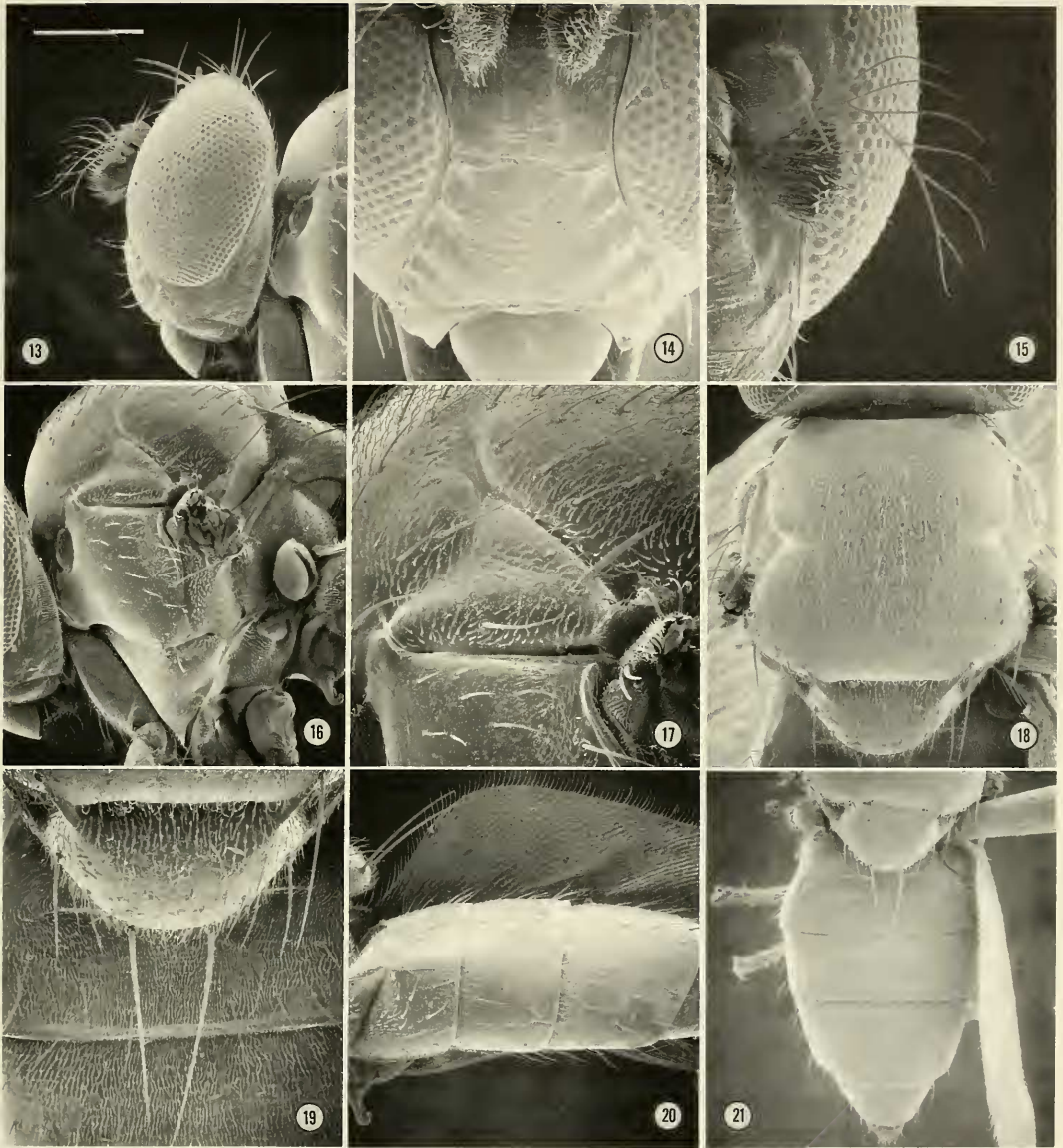
*Other specimens examined from St. Vincent.*—Charlotte Parish: Colinarie River (2 km W South Rivers, 225 m), 13 Jul 1989, M. Sorensson, B. Mårtensson (1 ♂, 3 ♀; ZIL). St. Andrew Parish: Camden Park, 25 Mar 1989, A. Freidberg, W. N. Mathis (1 ♂, 1 ♀;

USNM). St. Patrick Parish: Wallilabou (beach), 27 Mar 1989, W. N. Mathis (1 ♂; USNM).

*Distribution.*—Neotropical: West Indies (St. Vincent).

*Remarks.*—This species is distinguished from congeners by the following combination of characters: face at narrowest point between eyes narrow, width subequal to combined length of pedicel and 1st flagellomere; face with depressions laterally in which facial setae are inserted and with a moderately broad, vertical stripe that is distinctly granulose (Fig. 14); genal height at ventral margin of eye short, about equal to length of 1st flagellomere; first flagellomere concolorous with black pedicel; wing hyaline; halter whitish; mid and hind tibiae yellowish.

Like the preceding species, Wirth (1968a: 3) listed the name of *Discomyza dubia* as a junior synonym of *Athyroglossa glaphyropus* Loew. We have reexamined the primary types of both names (two syntype males from the MCZ for *A. glaphyropus*) and in each case have determined that they represent distinct species. The species are easily distinguished by the surface texture of the face. Specimens of *A. dubia* have a distinctly granulose, median, vertical stripe that is relatively broad (equal to width of pedicel), whereas in *A. glaphyropus*, the face has some surface texture that is rather vague, not dis-



Figs. 13–21. Scanning electron micrographs of *Athyroglossa dubia*: 13, Head, lateral view (200  $\mu$ m); 14, Face, anterior view (100  $\mu$ m); 15, Antenna, anterior view (86  $\mu$ m); 16, Thorax, lateral view (200  $\mu$ m); 17, Notopleuron, lateral view (86  $\mu$ m); 18, Mesonotum, dorsal view (200  $\mu$ m); 19, Scutellum, dorsal view (120  $\mu$ m); 20, Abdomen, lateral view (200  $\mu$ m); Abdomen, dorsal view (0.30 mm). (Scale lengths in parentheses; bar scale for all photographs = Fig. 13.)

tinctly granulose, and the overall facial appearance is mostly smooth and subshiny.

3. *Athyroglossa (Athyroglossa) nitida*  
Williston

*Athyroglossa nitida* Williston, 1896:397.

*Athyroglossa (Athyroglossa) nitida*.—Wirth, 1968a:3 [neotropical catalog].

*Type material*.—The lectotype female (designated here) is labeled “Windward side St. Vincent, W.I. H. H. Smith./Co-type [circular label with a yellow margin]/W.Indies.

1907–66./*Athyroglossa nitida* Will [handwritten, two red submarginal borders]/LECTOTYPE *Athyroglossa nitida* Will. ♀ By W.N. Mathis [handwritten except for “LECTOTYPE” and “By”, black sub-border].” The lectotype is double mounted (pin in a rectangular cardboard), is in good condition, and is in the BMNH. There is also a paralectotype female in the BMNH. Williston, in the original description, noted “Two specimens [♂, ♀]. St. Vincent.”

A third specimen, a male from AMNH, is labeled “TYPE No. A. M. N. H. [red]/Am. Mus. Nat. Hist. Dept. Invert. Zool. No. 20319a [number handwritten, “a” in pencil].” This specimen is double mounted (minute nadel in a heavy paper base, and is in good condition.

Williston noted two specimens (a male and female syntype) in the original description, but there are three specimens that are now labeled as syntypes: two females in the BMNH and a male in the AMNH. As the collections from St. Vincent were deposited primarily in the BMNH, we are assuming that the two specimens there are the original syntypes and that the male from the AMNH was identified later, then labeled as a “TYPE,” and is not part of the type series. The male at the AMNH is conspecific with the two females.

*Other specimens examined from St. Vincent.* —St. Andrew Parish: Camden Park, 25 Mar 1989, A. Freidberg (2 ♂, 1 ♀; USNM).

*Distribution.* —Neotropical: Bolivia, Colombia, Costa Rica, Ecuador, El Salvador, Guyana, Mexico, Panama, Peru, Venezuela, West Indies (Cuba, Dominica, Puerto Rico).

*Remarks.* —This species is distinguished from congeners by the following combination of characters: face conically prominent below antennal grooves; face almost entirely smooth; arista with 5–6 dorsal branches; wing lightly infuscate; halter whitish to yellowish; tibiae mostly black, at most with apex of mid and hind legs yellowish.

#### 4. *Ochthera cuprilineata* Wheeler

*Ochthera cuprilineata* Wheeler, 1896:123.—Clausen, 1977:486–492 [revision and lectotype designation].

*Ochthera cuprilineata* Williston, 1896:402 [preoccupied, Wheeler, 1896].—Wirth (1968a:21) listed this species as being valid.

*Ochthera humilis* Williston, 1897:6.—Cresson, 1938:36.—Clausen, 1977:486 [synonymy].

*Ochthera melanderi* Cresson, 1944:8.—Sturtevant & Wheeler, 1954:233 [review].—Clausen, 1977:486 [synonymy].

*Type material.* —Lectotype female of *O. cuprilineata* Wheeler (designated by Clausen 1977:488) is labeled “[brown square label without any writing]/St. Vincent W. Indies/W.M. Wheeler, Collection./*Ochthera cuprilineata*, Will. [handwritten]/LECTOTYPE *Ochthera cuprilineata* Wheeler ♀ Det. P.J. Clausen, 1973 [handwritten except “LECTOTYPE,” red].” The lectotype is double mounted (pin in a rectangular cardboard), is in fair condition (wings missing), and is deposited in the AMNH. Two paralectotypes are deposited in the BMNH. In the original description, Williston noted “Eight specimens.”

The lectotype males (both specimens designated by Clausen 1977:488) of *O. humilis* (Brazil. Rio de Janeiro: Rio de Janeiro) and *O. melanderi* (USA. California: Riverside Co., Riverside) are deposited in the ANSP.

*Distribution.* —Nearctic: USA (AZ, CA, NM, OK, TX). Neotropical: Argentina, Brazil, Canal Zone, Costa Rica, Mexico, Honduras, Guatemala, Panama, Ecuador, Paraguay, Peru, Trinidad, West Indies (Puerto Rico, St. Vincent).

*Remarks.* —This species is unique among congeners in having a single, black, facial spot that is vertically elongate, tapered both dorsally and ventrally, and sometimes with a purplish luster.

5. *Allotrichoma (Pseudohecamede) abdominale* (Williston)

*Hecamede abdominalis* Williston, 1896:398.  
*Allotrichoma abdominale*. — Williston, 1897:  
4 [generic combination].

*Pseudohecamede abdominalis*. — Hendel,  
1936:106 [generic combination]. — Wirth,  
1956:4 [review, Bahamas]; 1965:737  
[nearctic catalog]; 1968a:5 [neotropical  
catalog].

*Allotrichoma (Pseudohecamede) abdomi-  
nale*. — Mathis, 1991:8–14 [revision].

*Allotrichoma longirostre* Hendel, 1930:135  
[Bolivia]. — Wirth, 1968a:5 [synonymy].

*Type material*. — Williston, in the original description of *H. abdominalis*, noted “Five specimens. St. Vincent.” Two female syntypes of *Hecamede abdominalis* Williston were examined as part of this study. The first is labeled “Co-type [disk with yellow margin]/St. Vincent. W.I. H. H. Smith./W. Indies. 1907-66./+ [handwritten on a nearly square label/May/Hecamede abdominalis Will [handwritten, red sub-border].” The second female syntype is labeled “Co-type [disk with yellow margin]/Windward side St. Vincent. W.I. H. H. Smith./W. Indies. 1907-66./Hecamede abdominalis Will [handwritten, red sub-border].” Each of the two syntypes is double mounted (minute nadel in a small rectangular card on its edge), is in poor condition (the head is missing on both), and is deposited in BMNH. Because the syntypes are in poor condition, and critical characters for identification (structures of the male terminalia) are not found in females, we have not elected to designate a lectotype for this species. We have collected and studied several males from St. Vincent, the type locality, and these are conspecific.

The lectotype male of *A. longirostre* (Bolivia. Fortin Esteros; designated by Mathis 1991:9) is deposited in the Staatliches Museum für Naturkunde, Stuttgart, Germany.

*Other specimens examined from St. Vincent*. — St. Andrew Parish: Buccament Bay,

25–28 Mar 1989, W. N. Mathis (2 ♂, 6 ♀; USNM). St. David Parish: Richmond Beach, 28 Mar 1989, W. N. Mathis (2 ♂; USNM). St. George Parish: Kingstown, Botanical Garden, 25–27 Mar 1989, W. N. Mathis (6 ♂, 2 ♀; USNM); Yambou Head, 27 Mar 1989, W. N. Mathis (1 ♂, 2 ♀; USNM). St. Patrick Parish: Cumberland Bay, 28 Mar 1989, A. Freidberg (1 ♂, 1 ♀; USNM); Wallilabou (beach), 27 Mar 1989, W. N. Mathis (3 ♂, 1 ♀; USNM).

*Distribution*. — Nearctic: USA (AL, AZ, AR, CA, FL, GA, MD, OH, TX, VA, WA). Neotropical: Argentina, Bahamas, Belize, Bolivia, Brazil, Costa Rica, Ecuador, El Salvador, Mexico, Panama, Paraguay, Peru, Venezuela, West Indies (Dominica, Guadeloupe, Jamaica, St. Vincent, Trinidad).

*Remarks*. — The distinctive, silvery-gray, horizontal stripe, which extends from the postpronotum through the ventral portion of the notopleuron, and the bicolored anepisternum usually distinguish this species from most congeners. To distinguish this species from *A. baja* Mathis or *A. ecuadorensis* Mathis with which it is very similar, characters of the male terminalia need to be examined (see Mathis 1991, for figures).

6. *Ptilomyia parva* (Williston)

*Hydrellia parva* Williston, 1896:399.

*Ptilomyia enigma* Coquillett, 1900b:262. — Wirth, 1968a:4 [synonymy].

*Ptilomyia parva*. — Wirth, 1968a:4 [neotropical catalog; generic combination].

*Type material*. — The holotype male of *Hydrellia parva* is labeled “Type [circular label with a red border]/St. Vincent, W.I. H. H. Smith./W. Indies. 1907-66.[a gray square label]/May/Hydrellia parva Will [handwritten, two red submarginal borders].” The holotype is double mounted (pin in a rectangular piece of cardboard), is in good condition, and is deposited in the BMNH.

The holotype female of *Ptilomyia enigma*



(West Indies. Puerto Rico) is deposited in the USNM (4379).

*Other specimens examined from St. Vincent.*—Charlotte Parish: Colonarie beach, 29 Mar 1989, W. N. Mathis (1 ♂; USNM). St. Andrew Parish: Buccament Bay, 25–28 Mar 1989, W. N. Mathis (10 ♂; 10 ♀; USNM); Camden Park, 25 Mar 1989, W. N. Mathis (6 ♂; 3 ♀; USNM). St. George Parish: Yambou Head, 27 Mar 1989, W. N. Mathis (7 ♂, 4 ♀; USNM). St. Patrick Parish: Cumberland Bay, 28 Mar 1989, W. N. Mathis (4 ♂; 3 ♀; USNM).

*Distribution.*—Nearctic: USA (AK, FL, GA, NM, MO, OH, SC, TX, VA). Neotropical: Bahamas, Bolivia, Costa Rica, Ecuador, El Salvador, Mexico, Panama, West Indies (Grenada, Dominica, Jamaica, Puerto Rico, St. Vincent, Trinidad).

*Remarks.*—This species is distinguished by the lack of a well-developed, presutural, dorsocentral seta; the mostly hyaline wing (lacking transverse bands but crossvein *dm-cu* infuscate) the sparsely microtomentose mesonotum and abdomen, which are dark brown and subshiny, and the larger dorsocentral and acrostichal setae at the sutural level.

#### 7. *Discocerina (Basila) nana* Williston

*Discocerina nana* Williston, 1896:396.

*Discocerina (Basila) nana.*—Wirth, 1968a: 7 [neotropical catalog; listed as being valid in the subgenus *Basila*].

*Type material.*—The lectotype male (designated here) is labeled “Co-type [circular label with a yellow border]/1000 feet/[a black, square label]/St. Vincent, W.I. H. H. Smith./W.Indies. 1907–66./*Discocerina nana* Will. [handwritten, two red submarginal borders]/LECTOTYPE *Discocerina nana* Will. ♂ By W.N.Mathis [handwritten except for “LECTOTYPE” and “By”, black sub-border].” The lectotype is double

mounted (pin in a rectangular piece of cardboard), is in good condition, and is deposited in the BMNH. There are also eight paralectotypes as follows: BMNH (5 ♂, 1 ♀), AMNH (1 ♂, 1 ♀). Williston, in the original description, noted that the type series included “Numerous specimens.”

Two paralectotypes (1 ♂, 1 ♀) are in the AMNH. The male paralectotype is labeled “[rectangular piece of paper, black on dorsal surface]/1000 feet [probably from Perseverance Valley]/TYPE No. A. M. N. H. [red]/Am. Mus. Nat. Hist. Dept. Invert. Zool. No. 20320 [number handwritten]/*Discocerina nana* Will [handwritten, apparently by Williston].” The female paralectotype bears the same type label, museum label (but with number 20321), and determination label.

*Other specimens examined from St. Vincent.*—St. Patrick Parish: Hermitage (6 km E Spring Village at Cumberland River, 550 M), 9 Jul 1989, M. Sorensson, B. Mårtensson (8 ♂, 2 ♀; ZIL).

*Distribution.*—Neotropical: Costa Rica, Colombia, West Indies (Dominican Republic, Dominica, Grenada, Puerto Rico, St. Vincent).

*Remarks.*—This species is distinguished from congeners, especially other species of the subgenus *Basila*, by the following combination of characters: facial series of setae 2 on each side; face distinctly two toned, a narrow, bare, shiny, vertical stripe that is bordered laterally by dense, lightly golden-white microtomentum; parafacials very narrow; frons also two toned, parafrons and narrowly triangular ocellar triangle densely microtomentose, blackish, appearing velvety, distinctly contrasted with remainder of frons which is lightly grayish blue; antenna mostly yellowish, pedicel and 1st flagellomere with some dark coloration anterodorsally; mesonotum almost uniformly colored and invested with light dusting of microtomentum, lacking distinct stripes or isolated spots; supra-alar seta lacking; and wing hyaline.

8. *Discocerina (Lamproclasiopa) obscura*  
Williston

*Discocerina obscura* Williston, 1896:397.  
*Discocerina (Lamproclasiopa) obscura*. —  
Wirth, 1968a:8 [neotropical catalog].

*Type material*. — The lectotype male (designated here) is labeled “Co-type [circular label with a yellow border]/Windward side St. Vincent, W.I. H. H. Smith./W.Indies. 1907–66./1000 feet/[black square]/Discocerina obscura Will [handwritten, two red submarginal borders]/LECTOTYPE Discocerina obscura Will. ♂ By W.N.Mathis [handwritten except for “LECTOTYPE” and “By”, black sub-border].” The lectotype is deposited in the BMNH. There are also 19 paralectotypes as follows: BMNH (10 ♂, 5 ♀), KU (2 ♀ “Kingstown” and “500 feet.”), AMNH (2 ♂, 20323, “500 feet” and “1000 feet”). Williston, in the original description, noted that there were “Numerous specimens.” In the AMNH there is also one specimen that is apparently a paralectotype from “Kingstown” (sex undetermined, abdomen removed, 20317).

*Other specimens examined from St. Vincent*. — Charlotte Parish: Colonarie River (2 km W South Rivers, 225 m), 13 Jul 1989, M. Sorensson, B. Mårtensson (7 ♂, 1 ♀; ZIL); Montreal, 26 Mar 1989, W. N. Mathis (1 ♂, 4 ♀; USNM). St. Andrew Parish: Camden Park, 25 Mar 1989, W. N. Mathis (4 ♂, 1 ♀; USNM). St. George Parish: Kingstown, Botanical Garden, 25–27 Mar 1989, W. N. Mathis (25 ♂, 2 ♀; USNM). St. Patrick Parish: Cumberland Bay, 28 Mar 1989, A. Freidberg, W. N. Mathis (2 ♀; USNM); Wallilabou (beach), 27 Mar 1989, W. N. Mathis (1 ♂; USNM).

*Distribution*. — Nearctic: USA (FL, GA, LA, NY). Neotropical: Brazil, Panama, West Indies (Cuba, Dominca, Puerto Rico, St. Vincent).

*Remarks*. — This species is distinguished from congeners, especially those of the subgenus *Lamproclasiopa*, by the following

combination of characters: facial series of setae 3 on each side; face unicolorous, invested with whitish microtomentum; parafacials lacking setulae; frons uniformly lightly microtomentose, lacking distinctive bluish or greenish stripes; mesonotum uniformly subshiny, with light investment of brown microtomentum, lacking shiny surfaces with metallic luster; supra-alar seta present; anterior notopleural seta inserted much closer to posterior seta and to postpronotal seta; and abdomen similar in color and with only slightly more microtomentum than mesonotum.

9. *Hydrochasma faciale* (Williston)

*Discocerina facialis* Williston, 1896:396.  
*Hydrochasma faciale*. — Wirth, 1968a:8  
[neotropical catalog; generic combination].

*Hydrochasma zernyi* Hendel, 1936:103. —  
Wirth, 1968a:8 [synonymy].

*Hydrochasma capax* Cresson, 1938:26. —  
Wirth, 1968a:8 [synonymy].

*Type material*. — The lectotype male (designated here) is labeled “Co-type [circular label with a yellow border]/Windward side St. Vincent, W.I. H. H. Smith./W.Indies. 1907–66./Discocerina facialis Will. [handwritten, two red submarginal borders]/LECTOTYPE Discocerina facialis Will. ♂ By W.N.Mathis [handwritten except for “LECTOTYPE” and “By”, black sub-border].” The lectotype is double mounted (pin in rectangular piece of cardboard), is in poor condition (right foreleg, mid legs missing), and is deposited in the BMNH. There is also one female paralectotype (BMNH). Williston, in the original description, noted “Five specimens. St. Vincent.” The other syntypes (1 ♂, 2 ♀, BMNH) are apparently representatives of a *H. incisum* (no silvery triangular patches on dorsum of abdomen).

The syntypes of *Hydrochasma zernyi* (Brazil. Pará: Santarém) are deposited in the NMW.

The holotype female of *Hydrochasma capax* (Guatemala. Gualan) is deposited in the ANSP (6533).

*Other specimens examined from St. Vincent.*—Charlotte Parish: Colonarie (beach), 29 Mar 1989, W. N. Mathis (2 ♂; USNM). St. Andrew Parish: Buccament Bay, 25–28 Mar 1989, W. N. Mathis (6 ♂, 15 ♀; USNM). St. David Parish: Richmond Beach, 28 Mar 1989, W. N. Mathis (1 ♀; USNM). St. Patrick Parish: Cumberland Bay, 28 Mar 1989, A. Freidberg, W. N. Mathis (5 ♂, 3 ♀; USNM); Wallilabou (beach), 27 Mar 1989, W. N. Mathis (5 ♂, 10 ♀; USNM).

*Distribution.*—Nearctic: USA (AZ, CA, TX). Neotropical: Argentina, Brazil, Ecuador, Guatemala, West Indies (Dominica, St. Vincent).

*Remarks.*—This species is distinguished from congeners by the following characters: antennal coloration almost evenly divided between yellowish and dark gray, dorsal and anterior surfaces of pedicel and 1st flagellomere extensively dark gray; parafacial silvery white, concolorous with facial coloration; fore femur bearing a distinctive, comb-like row of stout setulae along anteroventral surface; tibiae mostly gray; and abdomen lacking wedge-shaped silvery-gray areas.

We follow Wirth (1968a) in recognizing the two junior synonyms of *H. faciale*, as noted in the synonymy, but did not confirm the conspecificity of the appropriate primary types.

10. *Polytrichophora desmata* (Williston),  
new combination  
Figs. 22–25

*Psilopa desmata* Williston, 1896:395.—

Wirth, 1968a:9 [neotropical catalog; listed as an unrecognized species].

*Polytrichophora boriquireni* Cresson, 1930:77; 1946:143 [review].—Wirth, 1968a:8 [neotropical catalog]. new synonym.

*Type material.*—The holotype male of *Psilopa desmata* is labeled “Type [circular

label with a red border]/Windward side St. Vincent, W.I. H. H. Smith./W.Indies. 1907–66./*Psilopa desmata* Will [handwritten, two red submarginal borders].” The holotype is double mounted (pin in a rectangular piece of cardboard), is in poor condition (head and right wing missing, mesonotum cracked anteriorly; abdomen removed, dissected, parts in an attached microvial), and is deposited in the BMNH.

The holotype male of *Polytrichophora boriquireni* (West Indies. Puerto Rico: Adjuntas) is deposited in the ANSP.

*Other specimens examined from St. Vincent.*—Charlotte Parish: Montreal, 26 Mar 1989, W. N. Mathis (1 ♂; USNM).

*Distribution.*—Neotropical: West Indies (Dominica, Puerto Rico, St. Vincent).

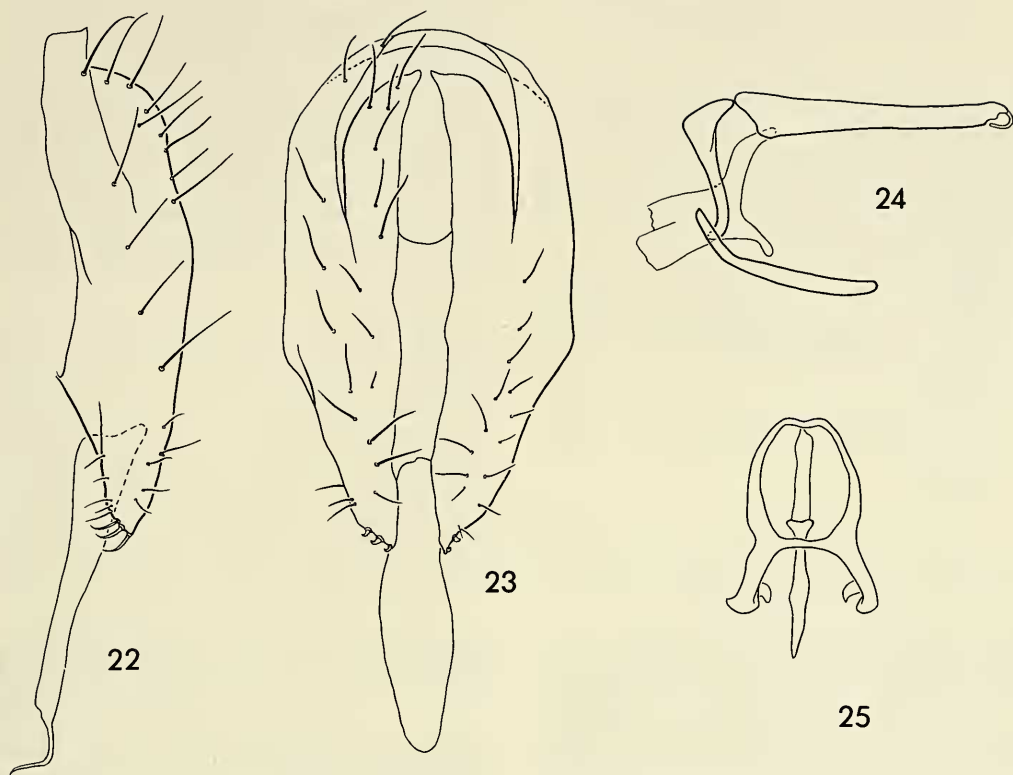
*Remarks.*—Williston, who commented on the specific locality of only one other species (*Ephydra pygmaea*), noted that the holotype of the senior synonym was collected “Near the sea by open stream.”

This species is distinguished from congeners by the following combination of characters: lower portion of fronto-orbits not differing significantly in color from parafacials; midfacies below midheight with broad, median area moderately microtomentose, appearing dull, grayish, contrasted with blackish, shinier, lateral margins of midfacies; parafacial color contrasted with the much darker midfacies; parafacials with little or no dilation ventrally; fore femur with distinct row of moderately short, stout setae along posteroventral surface; abdominal terga 1–4 subshiny, moderately microtomentose, blackish brown; 5th tergum of male distinctly more sparsely microtomentose and shinier than terga 1–4, black.

11. *Leptopsilopa nigrimana* (Williston)

*Psilopa nigrimana* Williston, 1896:393.

*Leptopsilopa nigrimana.*—Cresson, 1938:30 [generic combination].—Wirth, 1956:14 [review, Bahamas]; 1968a:10 [neotropical catalog].



Figs. 22–25. *Polytrichophora desmata*: 22, Epandrium, cerci, and aedeagus, lateral view; 23, Same, posterior view; 24, Internal genitalia, lateral view; 25, Hypandrium, ventral view.

*Psilopa willistoni* Cresson 1918:53 [unjustified new name for *Psilopa nigrimana* Williston, see Cresson 1938:31].

*Leptopsilopa willistoni*.—Curran 1928:61 [generic combination].

*Type material*.—The holotype female (not a male as Williston indicated) is labeled “Type [circular label with a red border]/Windward side St Vincent, W.I. H. H. Smith./W.Indies. 1907–66./May/[gray square]/*Psilopa nigrimana* [handwritten, two red submarginal borders].” The holotype is double mounted (pin in a rectangular piece of cardboard), is in very poor condition (head, left wing, left hind leg missing, mesonotum cracked), and is deposited in the BMNH.

*Other specimens examined from St. Vincent*.—St. Andrew Parish: Buccament Bay,

25–28 Mar 1989, W. N. Mathis (1 ♀; USNM). St. David Parish: Richmond Beach, 28 Mar 1989, W. N. Mathis (2 ♂, 3 ♀; USNM). St. Patrick Parish: Cumberland Bay, 28 Mar 1989, A. Freidberg, W. N. Mathis (21 ♂, 13 ♀; USNM).

*Distribution*.—Widespread throughout the Bahamas, Mexico, the West Indies (Dominica, St. Vincent), and Central and South America.

*Remarks*.—This species is easily distinguished from congeners by the completely hyaline wing; the whitish yellow to ochraceous fore coxa and trochanter (remainder of foreleg black); and trochanter and distal half of middle and hind coxae, basal margin of middle and hind femora, middle and hind tibiae and tarsi, except 5th tarsomere, ochraceous.

12. *Paratissa pollinosa* (Williston)

Fig. 26

*Drosophila pollinosa* Williston, 1896:414.*Paratissa pollinosa*. — Coquillett, 1900a:36 [generic combination]. — Sturtevant, 1923: 10 [types apparently lost, not in London, New York, or Kansas].*Paratissa semilutea* of authors (misidentification in part). — Wirth, 1965:740 [nearctic catalog; synonymy of *pollinosa* with *semilutea*]; 1968a:9 [neotropical catalog].*Hostis guamensis* of authors (misidentification). — Adachi, 1952:353 [list from Hawaii].

*Type material*. — Williston, in the original description, noted "Two specimens. St. Vincent." Sturtevant (1923) was unable to locate either after searching through collections in the BMNH, KU, and AMNH. We were likewise unsuccessful in finding any syntypes and have had to base our characterization of this species on the neotype (designated here) that was recently collected on St. Vincent. The neotype is labeled "W.I. St. Vincent. Cumberland Bay[,] (13°16'N, 61°16'W)[,] 8–10 June 1991[,] W. N. & D. Mathis/NEOTYPE ♂ *Drosophila pollinosa* Williston designated by W.N.Mathis & J. Edmiston [handwritten, red]." Twenty-one neoparatypes (3 ♂, 18 ♀), which bear identical locality label data, are also designated. The neotype is double mounted (minuten in a block of plastic), is in excellent condition (some laboubenialies on mesonotum), and is deposited in the USNM.

*Distribution*. — Neotropics: Panama and the West Indies (Dominica, St. Lucia, St. Vincent); Oceania: Hawaii (Oahu and Maui) and Pitcairn.

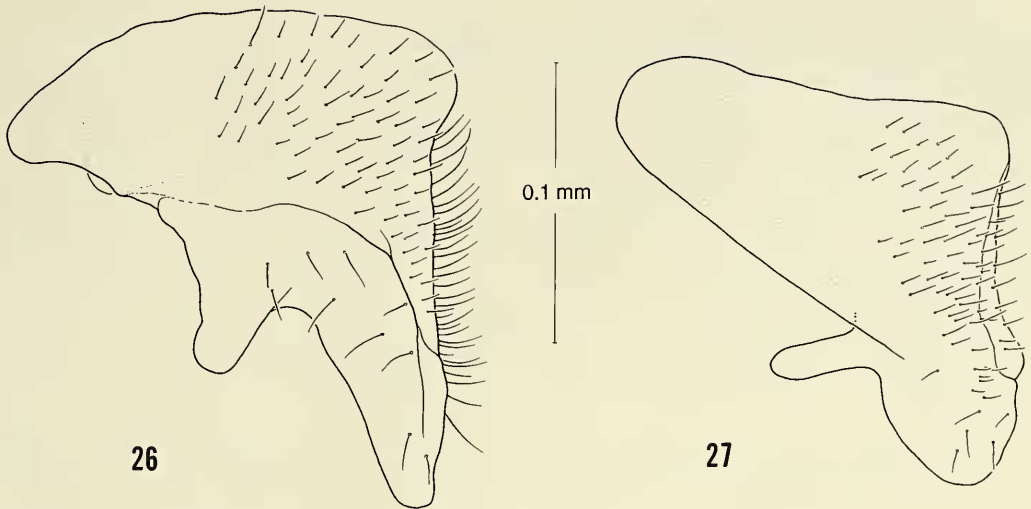
*Remarks*. — Williston (1896:414) stated that "In all probability the present species belongs among the Ephydridae, but the very flat face and the presence of vibrissae will lead one to search for the species in this genus." Williston's prediction came true, beginning with Coquillett (1900a), who as-

signed this species to *Paratissa*. Coquillett's precedent has been followed by all subsequent authors (see species synonymy), but without confirmation from study of the primary types, which were lost. We accept this precedent, which helped determine the designation of the neotype, but not the synonymy of *P. pollinosa* and *P. semilutea*, as there is more than one species in the Caribbean.

Externally this species is virtually identical to *P. semilutea*, and the two species have been confused with each other. The only differences that we are aware of that distinguish the two species are structures of the male terminalia (Figs. 26, 27), the shape of the surstylus and aedeagus in particular. These are as follows (Fig. 26): surstylus from a posterior view with the ventromedial angle acutely pointed, narrowly rounded in posteroventral view; the ventral spur has an oblique, ventromedial orientation, forming a distinct, V-shaped pocket (angle acute) between the spur and posteroventral projection; spur gradually tapered to bluntly rounded apex; and base of aedeagus, at juncture with narrow, parallel-sided apex, with sides angulate, forming a distinct shoulder on each side.

13. *Psilopa girschneri* von Röder*Psilopa girschneri* von Röder, 1889:55.*Psilopa nigropuncta* Williston, 1896:393. — Wirth, 1968a:9 [neotropical catalog; listed as being valid in the genus *Psilopa*]. new synonym.

*Type material*. — The holotype female of *P. nigropuncta* (not a male as Williston indicated) is labeled "Type [circular label with a red border]/Windward side St. Vincent, W.I. H. H. Smith/W.Indies. 1907–66./[maroon, square label]/May/*Psilopa nigropuncta* Will [handwritten, two red submarginal borders]." The holotype is double mounted (pin in a rectangular piece of cardboard), is in good condition, and is deposited in the BMNH.



Figs. 26, 27. Surstylus, posteroventral view: 26, *Paratissa pollinosa*; 27, *P. semilutea*.

The syntypes of *P. girschneri* (Germany. Artern, Sachsen) are deposited in the BMNH.

*Distribution.* — Australasian/Oceanian: Hawaiian Islands. Nearctic: Canada (QB), USA (AK, CA, CO, ID, TX, WA). Neotropical: Chile, Galápagos Archipelago, El Salvador. Oriental: Taiwan. Palearctic: Germany, Poland, Sweden.

*Remarks.* — This species is recognized by the investiture of silvery gray microtomentum on the face; the dark, mostly blackish femora and tibiae; and the dark spot at the apex of vein R4+5 (some specimens also have a darkened spot at the apex of vein M).

#### 14. *Typopsilopa nigra* (Williston)

*Psilopa nigra* Williston, 1896:393.

*Helaeomyia nigra.* — Cresson, 1942:124 [generic combination].

*Typopsilopa nigra.* — Wirth, 1968a:13 [neotropical catalog; generic combination]; 1968b:234 [revision and lectotype designation].

*Typopsilopa flavitarsis* Cresson, 1916:147. — Wirth, 1968a:13 [neotropical catalog; synonymy].

*Type material.* — Lectotype female of *Psilopa nigra* (designated by Wirth 1968b:235) is labeled “Co-type [circular label with a yellow border]/St. Vincent, W.I. H. H. Smith./W.Indies. 1907–66./*Psilopa nigra* Will [handwritten, two red submarginal borders]/LECTOTYPE *Psilopa nigra* Will. ♀ By W.W.Wirth [handwritten except for “LECTOTYPE” and “By”, black submarginal border].” The lectotype is double mounted (pin in a rectangular piece of cardboard), is in good condition, and is deposited in the BMNH.

The holotype male of *T. flavitarsis* (USA. Arizona: Mohave Co., Bill Williams Fork) is deposited in the Snow Collection (KU).

*Distribution.* — Nearctic: USA (AZ, CA, FL, GA, LA, VA). Neotropical: Bahamas, Brazil, British Guiana, Costa Rica, Mexico (La Bosa), Nicaragua, Panama, West Indies (Dominica, Puerto Rico).

*Remarks.* — Although Wirth’s revision (1968b) was intended to be the first citation of the generic combination and synonymy noted, his catalog of the neotropical species of Ephydriidae (1968a) was published first and is thus the proper reference for these actions.

This species is distinguished from congeners by the following combination of characters (males needed for most characters): tarsi of all legs at least partially pale; tarsomeres 1–4 of foreleg bright yellow; sternum 6 of male broader than distance across lobes of surstylus, heavily sclerotized and forming a broad concavity; surstylus deeply emarginate anteroventrally, with lateral lobes widely separated, low and angular, not as long as the distance between their distal points; male cerci with anteroventral end not spinelike.

15. *Notiphila decorata* Williston

Figs. 28–31

*Notiphila decorata* Williston, 1896:389.—

Wirth, 1968a:14 [neotropical catalog; listed as an unrecognized species].

*Dichaeta furcata* Coquillett, 1902:182. new synonym.

*Notiphila (Agrolimna) furcata*.—Cresson, 1917:59 [generic combination].—Wirth, 1965:747 [nearctic catalog]; 1968a:14 [neotropical catalog].—Mathis, 1979:63–65 [revision].

*Type material*.—The lectotype female (designated here) is labeled “Co-type [circular label with a yellow border]/Leeward side St. Vincent, W.I. H. H. Smith./W.Indies. 1907–66./N. decorata Will [handwritten in faint red ink]/LECTOTYPE *Notiphila decorata* Will. ♀ By W.N.Mathis [handwritten except for “LECTOTYPE” and “By”, black submarginal border].” The lectotype is deposited in the BMNH. There is also one female paralectotype (BMNH). Williston, in the original description, noted “Two specimens.”

The lectotype male of *D. furcata* (USA. Florida. Dade Co., Biscayne Bay; designated by Cresson 1917:59) is deposited in the USNM.

*Other specimens examined from St. Vincent*.—St. George Parish: Yambou Head, 27 Mar 1989, W. N. Mathis (1 ♂; USNM). St. Patrick Parish: Cumberland, 28 Mar

1989, A. Freidberg, W. N. Mathis (6 ♂, 6 ♀; USNM).

*Distribution*.—Nearctic: USA (AL, DE, FL, GA, LA, SC, TX, VA). Neotropical: West Indies (Dominica, St. Vincent).

*Remarks*.—This species is recognized by having four dorsally erect setae along the mid tibia; palpus orange to yellowish; antenna mostly blackish (first flagellomere sometimes reddish orange at base); arista with 10 or more dorsal branches; setal fascicle of hind basitarsus entirely pale; fourth tergum of male bearing a row of posterior marginal setae that are approximately twice the length of the tergum (Fig. 28); and fifth tergum of male produced posteriorly into a slender process that is equal in length to apical setae, this process bearing two long, apical setae (Fig. 28).

Identification and use of *N. decorata* supplants the better-known name of *N. furcata* Coquillett, which is also more descriptive of the unusual configuration and large setae of the male abdomen (see preceding paragraph). The species is clearly identifiable and easily recognized, and neither name is frequently used in the literature; thus the rule of priority is the advisable course.

16. *Notiphila (Notiphila) erythrocerata* Loew

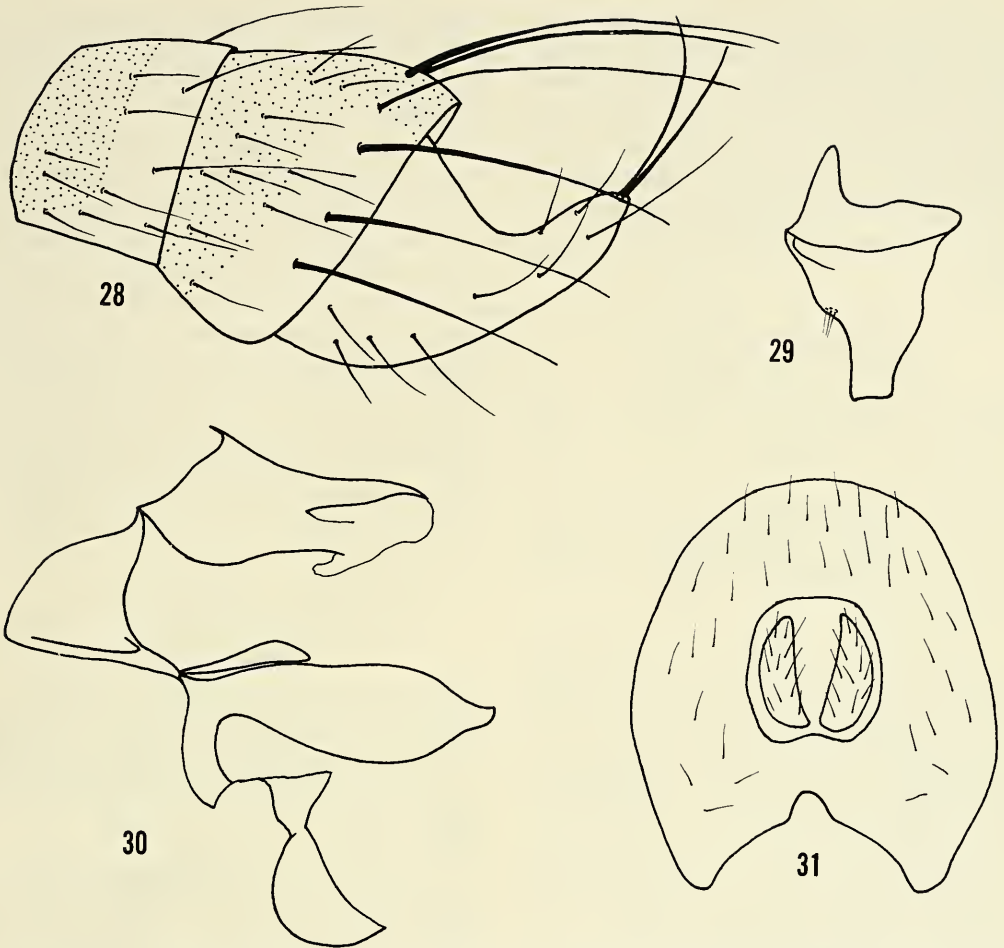
*Notiphila erythrocerata* Loew, 1878:194.

*Notiphila bellula* Williston, 1896:390.—

Cresson, 1947:58 [synonymy].

*Notiphila (Notiphila) erythrocerata*.—Wirth, 1968a:13 [neotropical catalog].

*Type material*.—The lectotype female of *N. bellula* (designated here) is labeled “Co-type [circular label with a yellow border]/Leeward side St. Vincent, W.I. H. H. Smith./W.Indies. 1907–66./*Notiphila bellula* Will. [handwritten, two red submarginal borders]/LECTOTYPE *Notiphila bellula* Will. ♀ By W.N.Mathis [handwritten except for “LECTOTYPE” and “By”, black submarginal border].” The lectotype is double mounted (pin in a rectangular piece of card-



Figs. 28–31. *Notiphila decorata*: 28, Apex of abdomen, lateral view; 29, Surstylus, lateral view; 30, Internal male genitalia, lateral view; 31, Epandrium and cerci, posterior view.

board), is in good condition, and is deposited in the BMNH. There are also six female paralectotypes as follows: BMNH (3 ♀), CU (2 ♀, 2768.1 and 2768.2), AMNH (1 ♀, 20329). Williston, in the original description, noted "Ten specimens. St. Vincent."

The lectotype female of *N. erythrochera* (Cuba; designated by Mathis 1979:31) is deposited in the MCZ.

*Other specimens examined from St. Vincent.* —Charlotte Parish: Montreal, 26 Mar 1989, W. N. Mathis (6 ♂, 6 ♀; USNM). St. Andrew Parish: Buccament Bay, 25–28 Mar 1989, W. N. Mathis (3 ♂, 1 ♀; USNM). St.

David Parish: Richmond Beach, 28 Mar 1989, W. N. Mathis (1 ♂, 2 ♀; USNM). St. George Parish: Yambou Head, 27 Mar 1989, W. N. Mathis (21 ♂, 8 ♀; USNM). St. Patrick Parish: Cumberland Bay, 28 Mar 1989, A. Freidberg, W. N. Mathis (4 ♀; USNM).

*Distribution.* —Nearctic: USA (AL, AZ, CA, CO, DA, FL, GA, LA, MD, NE, NV, NJ, NM, OR, SC, TX, UT, WY). Neotropical: widespread in central and South America, West Indies (Cuba, Dominica, Puerto Rico, St. Vincent).

*Remarks.* —This species is quite variable but can be distinguished from congeners by



the following combination of characters: antenna pale, yellowish orange, scape and pedicel often with some darkened areas; arisal rays 11–12; facial setae well developed but few in number 3–4 on each side; generally with a distinctive, brown pattern on the abdominal terga; and structures of male terminalia (see Mathis 1979, for figures).

17. *Paralimna* (*Paralimna*)  
*multipunctata* Williston

*Paralimna multipunctata* Williston, 1896: 390.—Wirth, 1956:17 [review, Bahamas].

*Paralimna* (*Paralimna*) *multipunctata*.—Wirth, 1968a:15 [neotropical catalog; listed as being valid in the subgenus *Paralimna*].

*Type material*.—The lectotype male (designated here) is labeled “Co-type [circular label with a yellow border]/Leeward side St. Vincent, W.I. H. H. Smith./W. Indies. 1907–66./*Paralimna multipunctata* Will [handwritten, faint red ink]/LECTOTYPE *Paralimna multipunctata* Will. ♂ By W.N. Mathis [handwritten except for “LECTOTYPE” and “By”, black submarginal border].” The lectotype is double mounted (pin in a rectangular piece of cardboard), is in good condition, and is deposited in the BMNH. There are also 10 paralectotypes as follows: BMNH (2 ♂, 2 ♀, 1?), KU (1 ♂, 1 ♀), AMNH, (3 ♀, 20329a, 20327, 20327a). Williston, in the original description, indicated that there were “Numerous specimens.”

*Other specimens examined from St. Vincent*.—St. Andrew Parish: Buccament Bay, 25–28 Mar 1989, W. N. Mathis (20 ♂, 5 ♀; USNM); Camden Park, 25 Mar 1989, A. Freidberg (1 ♂; USNM). St. George Parish: Yambou Head, 27 Mar 1989, W. N. Mathis (1 ♂, 2 ♀; USNM). St. Patrick Parish: Cumberland Bay, 28 Mar 1989, W. N. Mathis (1 ♂; USNM); Wallilabou (beach), 27 Mar 1989, W. N. Mathis (4 ♂, 1 ♀; USNM).

*Distribution*.—Nearctic: USA (CA, FL,

TX). Neotropical: Costa Rica, Mexico, Nicaragua, Panama, Venezuela, West Indies (Bahamas, Cuba, Dominica, Grenada, Puerto Rico, St. Thomas, St. Vincent).

*Remarks*.—This species is distinguished from congeners by the following combination of characters: body generally bicolored, dorsum mostly brown to dark brown, lateral surfaces mostly gray, sometimes silvery white; eye round, about as wide as high; gena high, height subequal to length of first flagellomere; anepisternum and katepisternum concolorous, light yellowish gray; fore femur with anteroventral, comb-like row of flattened setae; and posteroventral surface of fore femur at basal one-half bearing irregular but distinct linear patch of setae.

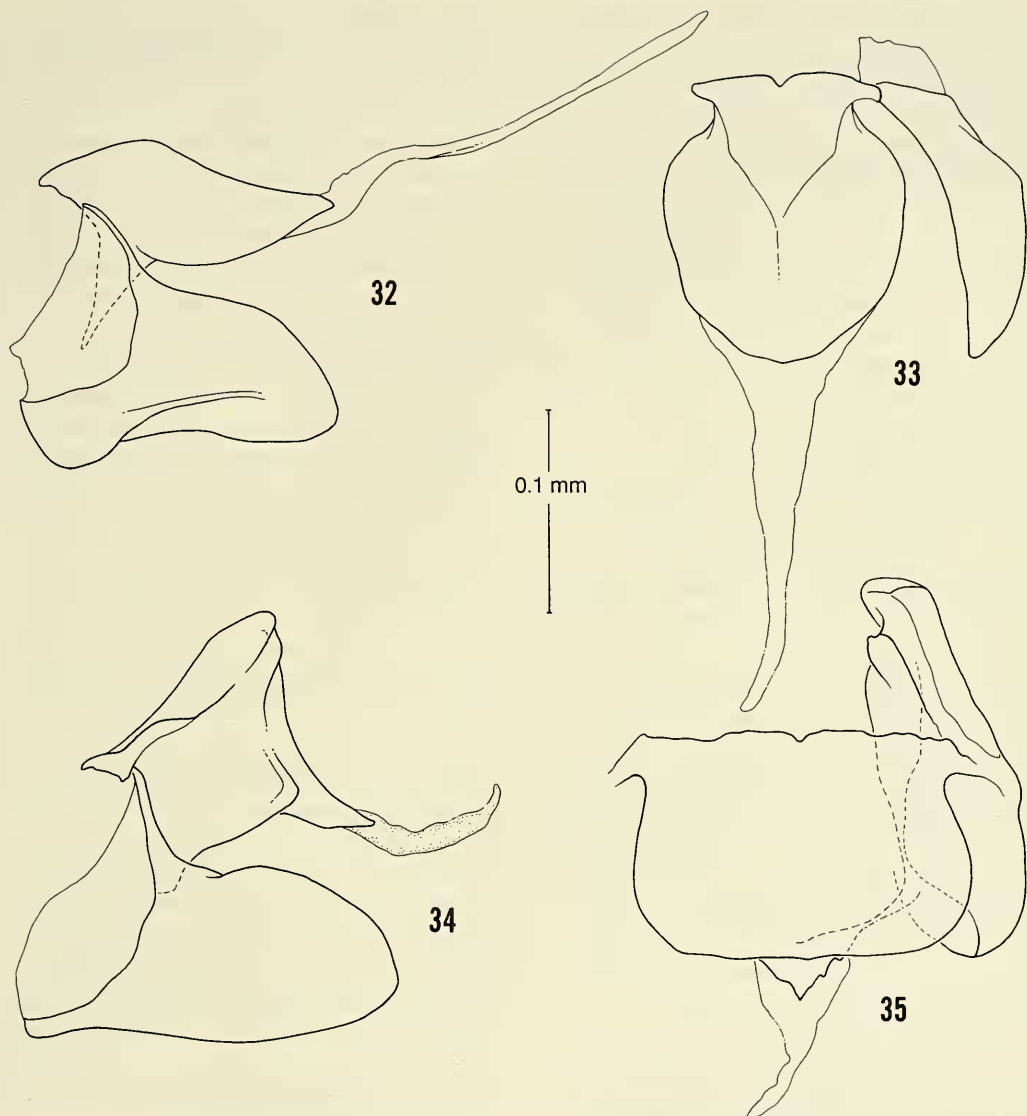
18. *Paralimna* (*Phaiosterna*)  
*obscura* Williston  
Figs. 32, 33

*Paralimna obscura* Williston, 1896:39].

*Paralimna* (*Phaiosterna*) *obscura*.—Wirth, 1968a:16 [neotropical catalog; listed as being valid under the subgenus *Phaiosterna*].

*Type material*.—The lectotype male (designated here) is labeled “Co-type [circular label with a yellow border]/Leeward side St. Vincent, W.I. H. H. Smith./W. Indies. 1907–66./*Paralimna brunnea* [lined out] *obscura* Will. [handwritten, two red submarginal borders]/LECTOTYPE *Paralimna obscura* Will. ♂ By W.N. Mathis [handwritten except for “LECTOTYPE” and “By”, black submarginal border].” The lectotype is double mounted (pin in a rectangular piece of cardboard), is in good condition, and is deposited in the BMNH. There are also 15 paralectotypes as follows: BMNH (4 ♂, 3 ♀), KU (3 ♂, “35” and “21”), AMNH (1 ♂, 4 ♀, 20326). Williston, in the original description, indicated that there were “Numerous specimens.”

*Other specimens examined from St. Vincent*.—St. Vincent (2 ♂; CU; “Lot. 662 Sub. 75”); one of the males lacks its head. The



Figs. 32–35. *Paralimna obscura*: 32, Gonite (right) and aedeagus, lateral view; 33, Aedeagus and gonite (left), dorsal view. *P. decipiens*: 34, Gonite (right) and aedeagus, lateral view; 35, Aedeagus and gonite (left), dorsal view.

determination label, which is handwritten, reads “*Paralimna brunnea* Will. [cursive] mss. may be *obscura*”). Charlotte Parish: Montreal, 26 Mar 1989, A. Freidberg (1 ♂, 1 ♀; USNM). St. Andrew Parish: Buccament Bay, 25–28 Mar 1989, W. N. Mathis (5 ♂, 6 ♀; USNM); Camden Park, 25 Mar 1989, W. N. Mathis (7 ♂, 2 ♀; USNM). St. David

Parish: Richmond Beach, 28 Mar 1989, W. N. Mathis (2 ♂; USNM). St. George Parish: Yambou Head, 27 Mar 1989, W. N. Mathis (5 ♂, 2 ♀; USNM).

*Distribution*. —Nearctic: Bermuda, USA (CA, FL, TX). Neotropical: Argentina, Bolivia, Brazil, Costa Rica, Ecuador, Mexico, Panama, Paraguay, West Indies (Cuba, Gre-

nada, Jamaica, Puerto Rico, St. Vincent, Virgin Islands).

*Remarks.* — This species and *P. decipiens* Loew are closely related and are very similar in appearance. Externally we have difficulty in distinguishing between them due to variation in coloration and microtomentum. Both species can be somewhat dark or light colored, with the dark specimens usually shinier as a result of less microtomentum. There is a tendency for *P. obscura* to be darker and shinier and for *P. decipiens* to be lighter and duller but with considerable variation between the two species.

The shapes of the aedeagus and gonites, however, are very distinctive, and readily provide characters to separate the two species. The aedeagus in *P. obscura* (Figs. 32, 33) is narrower from a dorsal view, slightly longer than wide, and the distal end of the sclerotized portion, especially in lateral view, is distinctly pointed. The aedeagus in *P. decipiens* (Figs. 34, 35) is much broader than long in a dorsal view, somewhat rectangular with the distal angles rounded, and in lateral view the distal aspect of the sclerotized portion is slightly concave and with the actual apex of the aedeagus as a pointed process that is extended from an anteroventral angle. Both *P. decipiens* and *P. obscura* occur on St. Vincent and at times were collected in the same swing of an aerial net.

#### 19. *Zeros flavipes* (Williston)

? *Ilythea flavipes* Williston, 1896:403.

*Zeros flavipes.* — Cresson, 1943:14 [generic combination]. — Wirth, 1968a:18 [neotropical catalog].

*Type material.* — The lectotype male (designated here) is labeled “Co-type [circular label with a yellow border]/Windward side St. Vincent, W.I. H. H. Smith./W. Indies. 1907–66./May/[rectangular gray label]/*Ilythea* ? *flavipes* Will [handwritten, two red submarginal borders]/LECTOTYPE *Ilythea flavipes* Will. ♂ By W.N. Mathis [hand-

written except for “LECTOTYPE” and “By”, black submarginal border].” The lectotype is deposited in the BMNH. There is also one female paralectotype (BMNH). Williston, in the original description, noted that there were “Two specimens.” One female specimen, listed as a syntype (20316, poor condition, head and wings missing) in the AMNH, cannot be considered as one of the primary types since the original series comprised only two specimens.

*Other specimens examined from St. Vincent.* — St. Andrew Parish: Buccament Bay, 25–28 Mar 1989, W. N. Mathis (1 ♂, 2 ♀; USNM); Camden Park, 25 Mar 1989, W. N. Mathis (4 ♂, 2 ♀; USNM). St. George Parish: Yambou Head, 27 Mar 1989, W. N. Mathis (6 ♂, 5 ♀; USNM).

*Distribution.* — Afrotropical: Zaire. Nearctic: Canada (ON), USA (FL, OH, TX, WV). Neotropical: Argentina, Belize, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Mexico, Panama, West Indies (Cuba, Jamaica, Puerto Rico, St. Vincent).

*Remarks.* — Although *Z. flavipes* is common on St. Vincent, it is not the only species of *Zeros* known to occur there. Two other species, *Z. fenestralis* (Cresson) and *Z. obscurus* (Cresson), are also common, but *Z. flavipes* is easily distinguished from them by the shiny black, mostly bare abdomen. This species may also be distinguished from congeners as follows: vein R2+3 nearly straight, not distinctly undulated; cell R2+3 with three infusate spots or transverse bars; and crossvein dm-cu present.

#### 20. *Nostima pulchra* (Williston)

*Hydrellia pulchra* Williston, 1896:399.

*Philygria basalis* Cresson, 1914:246. — Hendel, 1930:141 [synonymy].

*Nostima pulchra.* — Hendel, 1930:141 [generic combination]. — Cresson, 1938:34 [review]; 1941:6 [review]. — Wirth, 1968a:17 [neotropical catalog].

*Nostima (Nostima) pulchra.* — Cresson, 1947:42 [review].

*Type material.*—The holotype male of *Hydrellia pulchra* is labeled “Type [circular label with a red border]/St. Vincent, W.I. H. H. Smith./W. Indies. 1907–66./May/[a rectangular gray label]/*Hydrellia pulchra* Will [handwritten, two red submarginal borders]/*Nostima pulchra* (Williston) ♂ det. WNMathis Edmiston 1991 [species name, gender and “Edmiston” handwritten, black submarginal border].” The holotype is double mounted (pin in a rectangular piece of cardboard), is in good condition (right wing tip and 1st flagellomere of left antenna are missing), and is deposited in the BMNH.

The holotype male of *P. basalis* (Argentina. Tucumán) is deposited in the HNHM.

*Distribution.*—Neotropical: Argentina, Belize, Brazil, Colombia, Costa Rica, El Salvador, Guatemala, Mexico, Panama, Paraguay, Peru, West Indies (Dominica, Haiti, Puerto Rico, St. Vincent).

*Remarks.*—This species is distinguished from congeners by the following combination of characters: wing with dark basal band; silvery gray microtomentose spots on abdomen as follows: tergum 2 with posterolateral spot, tergum 3 with band on posterolateral margins not reaching lateral margins dorsomedially, tergum 3 with posterolateral spot; tergum 4 with anterodorsal roughly oval spots and spots posterolaterally, tergum 5 with semicircle area on posteromedial margins.

## 21. *Nostima willistoni* Wirth

*Hydrina nitida* Williston, 1896:400 [pre-occupied, Robineau-Desvoidy, 1830].

*Nostima willistoni* Wirth, 1968a:17 [neotropical catalog; replacement name for *H. nitida* Williston].

*Type material.*—The holotype male is labeled “Type [circular label with a red border]/500 feet./[a pink square label]/St. Vincent, W.I. H. H. Smith./W. Indies. 1907–66./*Hydrina nitida* Will [handwritten, two red submarginal borders]/*Nostima willis-*

*toni* Wirth ♂ det. WNMathis Edmiston 1991 [species name, gender and “Edmiston” handwritten, black submarginal border].” The holotype is double mounted (glue covers and obscures most of specimen; right wing, both antennae, most setae, and legs except for coxae 1, 2 and 3, and femur 3 missing), and is deposited in the BMNH.

*Distribution.*—Neotropical: West Indies (Dominica, St. Vincent).

*Remarks.*—This species is distinguished from congeners by the following combination of characters: gena with dense microtomentum ventrally; mesonotum vittate; wing veins and crossveins unicolorous; and abdomen shiny brown with microtomentum pattern on abdomen as follows: terga 1–5 with sparse yellowish-silver microtomentum; tergum 4 with silvery gray posterolateral spot along posterior margin.

## 22. *Hyadina nitifrons* (Williston), new combination

*Hydrina nitifrons* Williston, 1896:401.

*Hydrina nitidifrons* [sic].—Cresson, 1947:44 [discussion].

*Philygria nitifrons.*—Aldrich, 1905:627 [generic combination].—Wirth, 1968a:16 [neotropical catalog].

*Type material.*—The holotype female (not a male as Williston noted) is labeled “Type [circular label with a red border]/St. Vincent, W.I. H. H. Smith./W. Indies. 1907–66./*Hydrina nitifrons* Will. [handwritten, two red submarginal borders]/*Hyadina nitifrons* (Williston) ♀ det. WNMathis Edmiston 1991 [species name, gender and “Edmiston” handwritten, black submarginal border].” The holotype is double mounted (glued to a rectangular piece of cardboard), is in fair condition (antennae and several setae missing), and is deposited in the BMNH.

*Other specimens examined from St. Vincent.*—St. George Parish: Kingstown, Bo-

tanical Garden, 25-27 Mar 1989, W. N. Mathis (1 ♂; USNM).

*Distribution.*—Neotropical: West Indies (St. Vincent).

*Remarks.*—The neotropical species of *Hyadina* are now being revised (Clausen, pers. comm.), and a more extensive diagnosis will be included in that revision. External characters that we have noted to distinguish this species are as follows: parafacial invested with silvery-white microtomentum; anterior margin of notopleuron whitish gray, more densely microtomentose; mesonotum with presutural, prescutellar and supra-alar area of scutum somewhat bare, sparsely microtomentose, subshining, otherwise mesonotum invested with yellowish silver microtomentum; legs yellow, 4th and 5th tarsomeres darker, yellowish brown; wing faintly amber colored, veins and cross-vein unicolorous, yellowish brown.

### 23. *Dagus rostratus* (Cresson)

*Ephydra pygmaea* Williston, 1896:402 [preoccupied, Haliday, 1833].

*Ephydra rostrata* Cresson, 1918:66 [replacement name for *E. pygmaea* Williston].

*Dagus rostratus.*—Wirth, 1968a:24 [neotropical catalog].—Mathis, 1982:21 [lectotype designation]; 1983:720–722 [revision].

*Type material.*—The lectotype male (designated by Mathis 1982:21) is labeled “Co-type [disk with yellow border]/Windward side St. Vincent, W[est]. I[ndies]. H. H. Smith./W.Indies 1907–66./1000 feet./*Ephydra pygmaea* Will [handwritten, two red submarginal borders]/LECTOTYPE ♂ *Ephydra pygmaea* Williston by W.N. Mathis [handwritten, red].” The lectotype is double mounted (minute nadel in rectangular piece of cardboard), is in good condition (the first flagellomere of the right antenna is missing), and is in the BMNH. The BMNH also has one male and six female paralectotypes. KU has a male paralecto-

type, which bears a label with “500 feet.” printed on it. AMNH has a male and female paralectotype, which bear “Perseverance Val. 1000 ft.” on a locality label. In the original description, Williston noted “Fifteen specimens. Perseverance Valley, St. Vincent.”

*Other specimens examined from St. Vincent.*—Charlotte Parish: Montreal, 26 Mar 1989, W. N. Mathis (8 ♂, 1 ♀; USNM). St. Andrew Parish: Camden Park, 25 Mar 1989, W. N. Mathis (7 ♂, 7 ♀; USNM). St. Patrick Parish: Gordon Yard (2 km S Spring Village, 125 m), 11 Jul 1989, M. Sorensson, B. Mårtensson (5 ♂, 7 ♀; ZIL).

*Distribution.*—Neotropical: Brazil (Cresson, 1935:346), Costa Rica (Cresson, 1918:66), Guatemala, Mexico, Venezuela, West Indies (Cuba, Dominica, Grenada, Jamaica, Saint Vincent).

*Remarks.*—Perseverance Valley is one of the few specific localities that Williston noted in his treatment. The specimens collected in the valley have elevational data, which vary from 500 to 1000 ft.

This species is most similar to *D. trichocerus* but is distinguished from it and other congeners by the following combination of characters: face with mostly brown, microtomentose vestiture; dorsocentral setae 3–4 pairs; arista short (slightly more than 2× length of 1st flagellomere) and bearing, short, generally inconspicuous hairs; and epandrium of male triangular, distinctly pointed ventrally.

### 24. *Scatella obscura* Williston

*Scatella obscura* Williston, 1896:403.—Wirth, 1968a:26 [neotropical catalog].

*Type material.*—The lectotype male (designated here) is labeled “Co-type [circular label with a yellow border]/St. Vincent, W.I. H. H. Smith./W.Indies. 1907–66./[brownish pink square label]/*Scatella obscura* Will [handwritten, two red submarginal borders]/LECTOTYPE *Scatella obscura* Will. ♂ By W.N.Mathis [handwritten except for

“LECTOTYPE” and “By”, black submarginal border].” The lectotype is double mounted (pin in a rectangular piece of cardboard), is in good condition, and is deposited in the BMNH. There are also six paralectotypes as follows: BMNH (3 ♂, 2 ♀, 1?). Williston, in the original description, noted that there were “Eight specimens.”

*Other specimens examined from St. Vincent.*—St. Andrew Parish: Buccament Bay, 25–28 Mar 1989, W. N. Mathis (13 ♂, 9 ♀; USNM); Camden Park, 25 Mar 1989, W. N. Mathis (2 ♀; USNM). St. George Parish: Yambou Head, 27 Mar 1989, W. N. Mathis (7 ♂, 3 ♀; USNM).

*Distribution.*—Nearctic: USA (FL). Neotropical: Argentina, Brazil, Costa Rica, Ecuador, El Salvador, Panama, Paraguay, West Indies (Bahamas, Dominica, Puerto Rico, St. Vincent).

*Remarks.*—This species is distinguished from related congeners by the following characters: general coloration brown; mesofrons partially microtomentose, subshiny; gena low, height less than  $\frac{1}{3}$  eye height; wing infuscate and with several pale spots; both notopleural setae inserted at about same level.

#### Acknowledgments

For gracious hospitality and allowing access to collections during visits, we thank Roy Danielsson, Museum of Zoology and Entomology, Lund University, Lund, Sweden; James K. Liebherr, Cornell University, Ithaca, New York; David A. Grimaldi, American Museum of Natural History, New York; Brian Pitkin and John Chainey, The Natural History Museum, London, England; and Ian White, Commonwealth Agricultural Bureau International Institute of Entomology (at The Natural History Museum), London, England. We are also grateful to Steve Ashe, The Snow Entomological Collection, The University of Kansas, Lawrence, Kansas, and to David Furth, The Museum of Comparative Zoology, Harvard

University, Cambridge, Massachusetts, for the loan of specimens.

Field work on St. Vincent was supported by a grant from the Research Opportunity Fund, administered by Stanwyn G. Shetler, Acting Deputy Director, USNM.

Susann G. Braden and Vickie Godwin assisted with the scanning electron microscopy, Victor E. Krantz assisted with production of the photographs, and Elaine R. S. Hodges inked the line drawings (except for Figs. 28–31). For critically reviewing a draft of this paper, we thank P. J. Clausen, B. A. Foote, C. W. Sabrosky, W. W. Wirth, and Amnon Freidberg. The latter also accompanied one of us (WNM) on a field trip to St. Vincent in 1989 and collected many shore-fly specimens.

#### Literature Cited

- Adachi, M. S. 1952. New records and name changes in Hawaiian Ephydriidae.—Proceedings of the Hawaiian Entomological Society 14(3):353–354.
- Aldrich, J. M. 1905. A catalogue of North American Diptera (or two-winged flies).—Smithsonian Institution, Smithsonian Miscellaneous Collections 46(1444):1–680.
- Clausen, P. J. 1977. A revision of the nearctic, neotropical, and palearctic species of the genus *Ochthera*, including one Ethiopian species, and one new species from India.—Transactions of the American Entomological Society 103:451–530.
- Cogan, B. H. 1980. 71. Family Ephydriidae. Pp. 655–669 in R. W. Crosskey, ed., Catalogue of the Diptera of the Afrotropical Region, London. British Museum (Natural History), 1437 pp.
- Coquillett, D. 1900a. New genera and species of Ephydriidae.—The Canadian Entomologist 32(2): 33–36.
- . 1900b. Report on a collection of dipterous insects from Puerto Rico.—Proceedings of the United States National Museum 22:249–270.
- . 1902. New acalyptate Diptera from North America.—Journal of the New York Entomological Society 10(4):177–191.
- Cresson, E. T., Jr. 1914. Descriptions of new genera and species of the dipterous family Ephydriidae.—I.—Entomological News 25:241–250.
- . 1916. Descriptions of new genera and species of the dipterous family Ephydriidae.—III.—Entomological News 27:147–152.
- . 1917. Studies in the American Ephydriidae

- (Diptera). II. A revision of the species of the genera *Notiphila* and *Dichaeta*.—Transactions of the American Entomological Society 43:27–66.
- . 1918. Costa Rican Diptera collected by Philip P. Calvert, PH.D., 1909–1910. Paper 3.—A report on the Ephydriidae.—Transactions of the American Entomological Society 44:39–68.
- . 1930. Descriptions of new genera and species of the dipterous family Ephydriidae. Paper VIII.—Entomological News 41(3):76–81.
- . 1935. Descriptions of new genera and species of the dipterous family Ephydriidae.—Transactions of the American Entomological Society 61:345–372.
- . 1938. Notes on, and descriptions of, some neotropical Ephydriidae (Dipt.).—Revista de Entomologia 8(1–2):24–40.
- . 1941. The species of the neotropical genus *Nostima* (Diptera: Ephydriidae).—Notulae Naturae 78:1–8.
- . 1942. Synopses of North American Ephydriidae (Diptera) I. The subfamily Psilopininae, with descriptions of new species.—Transactions of the American Entomological Society 68:101–128.
- . 1943. The species of the tribe Ilytheini (Diptera: Ephydriidae: Notiphilinae).—Transactions of the American Entomological Society 69:1–16.
- . 1944. Descriptions of new genera and species of the dipterous family Ephydriidae. Paper XIV. Notulae Naturae.—The Academy of Natural Sciences of Philadelphia 135:1–9.
- . 1946. A systematic annotated arrangement of the genera and species of the neotropical Ephydriidae (Diptera). I. The subfamily Psilopininae.—Transactions of the American Entomological Society 71:129–163.
- . 1947. A systematic annotated arrangement of the genera and species of the neotropical Ephydriidae (Diptera). II. The subfamily Notiphilinae.—Transactions of the American Entomological Society 73:35–61.
- Curran, C. H. 1928. Diptera or two-winged flies. In Insects of Porto Rico and the Virgin Islands. In C. H. Curran, C. P. Alexander, C. R. Twinn, E. P. van Duzee, eds., Scientific survey of Porto Rico and Virgin Islands.—Annals of the New York Academy of Science 11(1):1–118.
- Harrison, A. D., & J. J. Rankin. 1976. Hydrobiological studies of eastern Lesser Antillean Islands. I. St. Vincent: freshwater habitats and water chemistry.—Archiv für Hydrobiologie, Supplement 50:96–144.
- Hendel, F. 1930. Die Ausbeute der deutschen Chaco-Expedition 1925/26. Diptera. XIX. Ephydriidae.—Konowia 9:127–155.
- . 1936. Ergebnisse einer zoologischen Sammelreise nach Brasilien, insbesondere in das Amazonasgebiet, ausgeführt von Dr. H. Zerny. X. Teil. Diptera: Muscidae acalyptratae (excl. Chloropidae).—Annalen des naturhistorischen Museums in Wien 47:61–106.
- Loew, H. 1878. Neue nordamerikanische Ephydriiden.—Zeitschrift für die Gesamten Naturwissenschaften 51:192–203.
- Mathis, W. N. 1979. Studies of Notiphilinae (Diptera: Ephydriidae), I: revision of the nearctic species of *Notiphila* Fallén, excluding the *caudata* group.—Smithsonian Contributions to Zoology 287:1–111.
- . 1982. Studies of Ephydriinae (Diptera: Ephydriidae), VI: review of the tribe Dagini.—Smithsonian Contributions to Zoology 345:1–30.
- . 1983. A revision of the genus *Dagus* Cresson (Diptera: Ephydriidae).—Proceedings of the Entomological Society of Washington 85:717–726.
- . 1989. 66. Family Ephydriidae. Pp. 639–649 in N. L. Evenhuis, ed., Catalog of the Diptera of the Australasian and Oceanian regions, E. J. Brill and B. P. Bishop Museum special publication 86, 1155 pp.
- . 1991. Studies of Gymomyzinae (Diptera: Ephydriidae), II: A revision of the shore fly subgenus *Pseudohecamede* Hendel of the genus *Alлотrichoma* Becker.—Smithsonian Contributions to Zoology 522:1–28.
- . 1992. Family Ephydriidae. In F. C. Thompson, ed., Checklist of Diptera of America north of Mexico (in press).
- Papavero, N. 1973. Essays on the history of neotropical dipterology, with special reference to collectors (1750–1905). Museu de Zoologia, Universidade de Sao Paulo. Vol. II, 446 pp.
- Röder, V. von. 1889. *Psilopa* (*Ephygrobia*) *Girschneri* n. sp.—Entomologische Nachrichten 15(4):54–56.
- Sturtevant, A. H. 1923. New species and notes on synonymy and distribution of Muscidae acalyptratae (Diptera).—American Museum Novitates 76:1–12.
- , & M. R. Wheeler. 1954. Synopses of nearctic Ephydriidae (Diptera).—Transactions of the American Entomological Society 79:151–257.
- Wheeler, W. M. 1896. The genus *Ochthera*.—Entomological News 7:121–123.
- Williston, S. W. 1896. XI. On the Diptera of St. Vincent (West Indies).—Transactions of the Entomological Society of London 3:253–446.
- . 1897. Diptera Brasiliana.—Kansas University Quarterly 6(1):1–12.

- Wirth, W. W. 1956. The Ephydriidae (Diptera) of the Bahama Islands.—American Museum Novitates 1817:1–20.
- . 1965. Family Ephydriidae. Pp. 734–759 in A. Stone, et al., eds., A catalog of the Diptera of America north of Mexico.—United States Department of Agriculture, Agriculture Handbook, 276:iv + 1696 pp.
- . 1968a. 77. Family Ephydriidae. Pp. 1–43 in N. Papavero, ed., A catalogue of the Diptera of the Americas south of the United States. Departamento de Zoologia, Secretaria da Agricultura, São Paulo.
- . 1968b. The genus *Typopsilopa* Cresson in the Western Hemisphere.—Proceedings of the Entomological Society of Washington 70(3):225–237.

(WNM) Department of Entomology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560, U.S.A.; (JFE) Padua Franciscan Friary, 7022 State Road, Parma, Ohio 44134, U.S.A.